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Gender in Employment: Case Study of Botswana[1]

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Executive Summary

1. ***Overview and Background***. This report on Botswana is the first of two country studies (the second concerns Mali) that examine gender and employment in Africa. The study is informed by two broad development frameworks. The first is the Millennium Development Agenda that views Millennium Development Goal 3, Gender Equality and Women's Empowerment, as a critical determinant in the attainment of all the Millennium Development Goals (MDGs), and more broadly, poverty reduction. The second is the African Development Bank's (AfDB) Managing for Development Results (MfDR), the organization's blueprint for development effectiveness. In response to two evaluations that concluded that the Bank's efforts to mainstream gender into its operations were weak, and encouraged by the Bank's Board and senior management, this study comes at an opportune moment to ensure that gender equality becomes one of the Quality-at-Entry standards central to the achievement of its stated goals. Up-to-date data collection and research efforts that go beyond the biological to the social, political and economic dimensions of gender inequality, are, therefore, timely and will contribute to effective and efficient policy- making.

2. ***Objectives and Rationale***. The three main objectives of the study are to: 1) explore existing national representative statistical and qualitative information on employment of men and women in various economic industries, formal and informal sectors; 2) analyze the underlying relationships between gender and employment and their determinants; and 3) to produce a comprehensive report in line with the ADF 11 commitment to generate gender-disaggregated data in two pilot RMCs and strengthen capacity to generate related analytical studies.

3. Botswana's income per capita is one of the highest in sub-Saharan Africa (SSA). A defining feature of the country is the high ratio of female-to-male enrolment at the tertiary level. Yet, there is an inherent mismatch between educational development and growth in economic opportunities in the country's labor force. Thus, Botswana offers an interesting setting for studying the determinants of gender inequality in employment during the course of national development.

4. ***Methodology***. Data for this study come from the 2005/2006 Botswana Labor Force Survey (BLSF), a cross-sectional survey of a nationally representative sample. Using multivariate analysis, the study examines: 1) gender inequality in agriculture, unpaid employment (family workers), paid employment, self-employment with employees, self-employment without employees, craft and related occupations, plant and machine operations, service occupations, clerical jobs, legislature/managerial, and professional occupations; and 2) the determinants of these relationships, focusing on human capital, demographic characteristics, and some structural/economic factors.

5. ***Principal Findings and Conclusions***. Overall, men are significantly more likely than women to be in: (i) craft and related occupations; (ii) self-employment without employees; (iii) self-employment with employees; (iv) legislature/managerial occupations; (v) professional occupations; (vi)

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agricultural employment; and (vii) paid employment. Women's employment disadvantage is greatest in the most secure and prestigious occupational categories: legislature/managerial and professional occupations. These findings hold even when other potentially influential variables such as age, educational attainment, marital status, and structural/ economic factors are taken into account. On the other hand, men are less likely than women to be employed in: (i) clerical occupations; (ii) unpaid family work; (iii) services; and (iv) plant and machine operations.

6. Comparisons of the determinants of women's and men's employment across the eleven industries and occupations indicate that the factors governing women's employment differ from those that govern men's behavior. As well, the determinants of employment are complex and multifaceted. The disadvantage faced by women in obtaining secure and profitable employment presents a challenge for efforts aimed at addressing gender inequality in the Botswana labor market.

7. ***Implications for Policy***. The use of nationally representative data, coupled with a detailed discussion of the methodology to facilitate replication elsewhere in the region, is valuable for developing policies and programs to achieve the MDG on gender equality in employment. The influence that variables measuring human capital, demographic and other factors had on the results points to the need for wide-ranging policies that address multiple issues. Policies designed to promote equity and eliminate poverty must recognize the differences between women's worlds of work, particularly with the aim of increasing profitability and career development in occupations where women are over-represented. A comprehensive effort to increase women's employment in profitable and secure jobs will be necessary. To this end, policies that aim to ensure that young female labor market entrants' academic qualifications match current labor market requirements should be enacted and enforced. Similarly, policies that facilitate women's ability to obtain and hold profitable paid employment and that ensure that self-employment is secure, profitable and sustainable are much needed. To this end, programs that facilitate women's access to capital or credit are imperative.

8. ***Research recommendations and next steps***. This study underscores the importance of taking into account the correlates of employment in analyses of gender differences in industries and occupations. As well as the human capital, demographic and structural/economic factors addressed here, measures of household wealth, income, family organization of work, marital relations, aspirations, individual agency, intergenerational aspects and ethnicity might usefully be included. Moreover, this study should not be regarded as the ultimate assessment of the relative importance of the factors that were examined here. Future research would benefit from employing alternative statistical methods to estimate the relative effects of these influences, as well as methods that account for factors that could not be taken into account. Future efforts should also focus on collecting and analyzing several waves of surveys in order to generate time series and trace historical trends.

1 Introduction

1.1 Overview and Background

1.1.1 This report on Botswana is the first of two country studies (the other is on Mali) of gender and employment in Africa. As the study terms of reference (TORs) note, "Promoting gender equality in employment is an important cornerstone to advance women's economic empowerment in Africa and elsewhere." Thus, the elimination of gender inequality in the labor market is a central goal of developing and developed countries alike, and one of the key objectives of development strategies designed to reduce poverty while achieving economic growth with equity. Indeed, together with eliminating gender disparities in schooling, closing the gender gap in employment is one of the principal determinants in attaining the Millennium Development Goals (MDGs), not just MDG 3, Gender Equality and Women's Empowerment.

1.1.2 Data collection and analysis that focus on gender inequality in sub-Saharan Africa (SSA) are particularly timely given the continent's urgent need for gender-related statistics to inform effective and efficient policy-making. However, earlier data collection and analysis efforts by the African Development Bank (AfDB, or the Bank), inter-alia, have used an analytical framework that relied on sex-disaggregated data, itself a reflection of the assumption that the principal differences between men and women are largely biological, thereby discounting the influence of social, political and economic factors.

1.1.3 A gender equality and women's empowerment approach takes these latter macro-level variables as a starting point and examines women's and men's roles, whether at the household or societal level in terms of power and how it is exercised. It is, therefore, necessary to have gender statistics that adequately reflect "differences and inequalities in the situation of women and men in all economic, social and political areas of life."

1.2 Situating the Study in AfDB's Gender Equality Agenda

1.2.1 In 2007/2008, around the time of the ADF-11 replenishment, the Bank began a series of major reforms in the way it does business. Managing for Development Results (MfDR) became the principal framework within which a range of organization-wide changes was launched. The emphasis is on achieving results and on measuring this achievement. However, broad-based reform of Bank operations and achievement of the new set of results set out in ADF-11, and under reformulation during ADF-12 negotiations, have necessitated addressing a principal constraint that has been identified both internally and through external reviews.

1.2.2 Two recent organization-wide evaluations—the Mid-term Review of the first Gender Action Plan and the OPEV-conducted Independent Evaluation of Quality at Entry for ADF-11 Operations and Strategies—concluded that the Bank's efforts to mainstream gender into its operations were weak. The Bank, led by the Quality Assurance and Results Department (ORQR) 4, and supported by such departments as Statistics (ESTA), has worked to ensure that gender mainstreaming is integrated into all aspects of Bank operations. The findings from the Mid-term Review of the Gender Plan of Action, which served as the basis for the up-dated GPOA (UGPOA) included the following:

- ♀ 60% to 70% of Bank projects do not include gender equality as a goal;
- ♀ Project log-frames missed gender specific indicators and outcomes;
- ♀ Project and program designs lacked activities to promote gender equality;
- ♀ Project Appraisal Reports lacked gender disaggregated data; and,
- ♀ Poverty analyses often excluded a gender dimension.[1]

1.2.3 This study by ESTA examines one of the most important dimensions of the gender equality and women's empowerment goal. It comes at an opportune moment, as the Bank is strongly committed to ensuring that gender equality becomes one of the Quality-at-Entry standards, and thus, central to the achievement of its stated goals and results agenda.

1.3 Gender and Employment Study: The Rationale

1.3.1 Throughout the world and for much of history, women have had dual roles as income generators (workers) and wives/mothers/caregivers, while men have largely functioned as income generators (Glick and Sahn 1998; Glick 2002). Although women's representation in the workforce has increased dramatically over the past 30 years, they continue to assume most of the family and household responsibilities. Even in the developed world where gender roles in the household have evolved over several decades, significant inequality remains. This duality in women's lives has resulted in gender inequality, not only in the household and the labor market, but also in women's social position and well-being.

1.3.2 At the global level, specific efforts to address gender inequality include the 1979 Convention on the Elimination of All Forms of Discrimination Against Women to the 1994 Cairo International Conference on Population and Development, and the 2000 United Nations Millennium Development Summit. The outcome of this summit was the formulation of the eight Millennium Development Goals (MDGs), which were adopted by all member countries, to serve as a framework in the fight against poverty and promote development. The target date for attaining these goals is 2015. One of the goals, elimination of gender inequality, especially in education and employment, while important in its own right, is viewed as critical to the attainment of the remaining goals (UNICEF 2003). Yet ten years after the goals were set and fewer than five years to the target date, sub-Saharan Africa lags behind its counterparts in the developing world. It is against this backdrop that the African Development Bank has undertaken pilot studies to examine gender inequality in employment in SSA, beginning with Botswana and Mali.

1.4 Study Purpose and Objectives

1.4.1 This study addresses "the limited availability of gender statistics in the Bank's Regional Member Countries (RMCs) … identified as one of the major constraints for making progress in policy development, development planning and monitoring progress." To remedy the situation, the Bank provides support to RMCs in the development of gender statistics through the Statistical Capacity Building (SCB) initiative.[2]

1.4.2 Thus, the studies of Botswana and Mali have three main objectives:

[1] See, ORQR.4, November 2010. Tracking Gender Equality Results and Resources: An AfDB Quality at Entry Tool, ORQR4, AfDB, Tunis.
[2] Multinational Statistical Capacity Building in Regional Member Countries for MDG Monitoring and Results Measurement.

1) To explore existing representative household sample surveys, standardized data and qualitative information on the employment of men and women in various industries, and in formal and informal sectors;
2) To conduct a detailed analysis of the underlying relationships between sex and employment and the determinants of these relationships; and,
3) To produce comprehensive analytical reports of the findings in line with the ADF 11 commitment to collect gender-disaggregated data in two pilot RMCs and strengthen capacity for generating related analytical studies.

2 Study Country Background and Context

2.1 The Regional Context: African Employment Trends and Gender

2.1.1 Education has intrinsic benefits, but lower long-term economic rewards (resulting from prolonged schooling/limited or unfavorable macroeconomic policies) can reduce its value. Development strategies in Africa are being formulated under demographic, social and macroeconomic duress. First, the expansion of education has been accompanied by growing school-age populations, reflecting the region's historically high fertility. Africa's share of the global school-age population rose from 10% in 1950 to 16% in 2000 (United Nations 2003). This population momentum has created high dependency ratios, that is, a large cohort of young people relying on a small number of working adults.

2.1.2 Second, SSA has been undergoing demographic transitions, such as changes in age at marriage, family structure, and more recently, declining fertility. More schooling leads to older age at first marriage and a greater prevalence of non-marital unions and single- or female-headed households. These changes, in turn, increase women's propensity to participate in the labor market. Likewise, declining fertility makes more time available for non-child-rearing/-bearing activities.

2.1.3 Third, urbanization of African countries has transformed economic activities and the meaning of paid work. Urbanization reduces reliance on subsistence agriculture and boosts the demand for consumer goods, thereby increasing the need for paid work. Indeed, urbanization affects not only the demand for agricultural products, but also the fundamental nature of agricultural work. What used to be viewed as agricultural and non-economic work has now assumed an important place in the economy. A manifestation of this evolution is the shift from voluntary and unpaid farm labor at peak periods to paid labor.

2.1.4 Urbanization also indirectly influences work opportunities. Urban labor markets offer better economic prospects than do rural ones. However, whether women reap the benefits depends on their representation in various occupational sectors, particularly the more profitable formal sector. At the same time, urbanization can weaken extended family and social networks that otherwise might ease the pressure created by the incompatibility between women's outside work and their childcare and family obligations. In fact, childcare, domestic services, and activities such as hair-braiding, garment-sewing and embroidery that were once provided free of charge now involve a cost and fall under the umbrella of informal economic activities. While this development improves the economic status of some who otherwise would not have been gainfully employed, it has implications for gender economic equality. In urban settings where childcare services are minimal or costly, women with more education will have to make trade-offs between intermittently withdrawing from formal work or paying heavily for these services. Such withdrawals from the workforce can reduce women's prospects for career advancement, and thus challenge policy efforts to close the gender gap in employment.

2.1.5 Sub-Saharan Africa disproportionately bears the global HIV/AIDS burden. In 2004, of the 36.9 million people with HIV/AIDS, 23.6 million lived in SSA; two years later in 2006, the figure had risen to 24.7 million. The epidemic, which predominantly affects adults in their prime productive years, is eroding the region's gains in human development and its future socio-economic resources. Added to tight development budgets, addressing the challenges of HIV/AIDS, hinders African governments' efforts to provide decent livelihoods for their citizens. As well, macro-economic forces increasingly define African labor markets. These forces include policy reforms following the economic crises of the 1980s and 1990s and the ensuing privatization of African labor markets (Eloundou-Enyegue and Davanzo 2003). Most countries have barely recovered from these crises, while others are grappling with the aftermath of the 2008 global economic crisis.

2.2 The National Setting: Botswana's Employment Profile

2.2.1 Botswana is a small country located in Southern Africa with a population size of 1.95 million[3] by mid-2009

with an annual population growth rate of 1.5% (AfDB Database, 2010). A gross national income per capita of US$6,470 in 2008 puts Botswana among the highest income countries in Africa (AfDB Database, 2010). Despite the economic downturn since 2008, Botswana maintains one of the highest per capita incomes in SSA. However, a recent assessment of labor supply and demand signals tight competition in the labor market arising from an imbalance in the pace of development of educational and labor market opportunity (World Bank, 2010). The HIV/AIDS pandemic has exacerbated the labor market supply and demand (World Bank, 2010). With 38% of individuals (15-49) living with HIV/AIDS and mirroring the heavy HIV/AIDS burden in the region, Botswana is home to the largest percentage of HIV/AIDS afflicted people in the SSA.

2.2.2 At independence, Botswana lacked a skilled and educated labor force (Siphambe 2000). The immediate response was heavy reliance on imported skilled labor, which proved both expensive and a disincentive to improving the country's human resource base.

2.2.3 In view of the human capital deficit inherited at independence, the Botswana government placed a high premium on education. This led to a substantial historical rise in school enrolment at all levels since independence to recent levels of 109.7% and 80.2%, respectively, in gross primary and secondary school enrolment for 2006 (AfDB Database). Indeed, the ratio of female to male enrolment at the tertiary level has also been high at 1.150 in 2006, and increasing. This figure is the highest among countries with available comparative data in the region.

2.2.4 Such progress in female educational attainment in Botswana is an anomaly across the continent (not including Lesotho) and should, in principle, translate into gender parity in employment. The most recent statistics available from ILO and World Bank databases are inconsistent with this theoretical expectation. On one hand, the female labor force participation rate in recent years has been 71% for both 2005 and 2006, increasing only marginally to 72% in 2007 and remaining stagnant in 2008. On the other hand, the figure has remained higher at 81% for males for the same period.

2.2.5 Siphambe (2000) attributes the income inequality between women and men to declines in the rates of return to education as Botswana's economy developed and the education system expanded leading to a mismatch between demand and supply for labor. As in much of Sub-Saharan Africa, the heavy government emphasis on educational development has eclipsed the development and growth in the country's labor market structures resulting in an unemployment rate of about 20% for females and a relatively lower rate of 15% for males (World Bank 2010). Thus, Botswana offers an interesting setting for studying the determinants of access to employment by men and women in the course of national development.

3 Study Methodology

3.1 Conceptual Framework

3.1.1 Leading theories of labor force participation have been grounded either in economic assumptions about the role of human capital, modernization and institutional segregation in labor market outcomes or in cultural perspectives emphasizing discrimination.

3.1.2 **Human capital theory** provides a general framework for understanding the importance of education for development. The theory emphasizes the primacy of abilities, education, experience and skills for labor market success (Becker 1981; 1992; Mincer 1974). It hypothesizes that education is directly related to participation and returns in the labor market. Thus, women's increased human capital and experience should facilitate their entry into the labor market, and as gender inequality in education narrows, so should inequality in the labor market. Extending the theory to the modernization perspective, as the occupational gender gap narrows, women's economic security and social status should improve (Goldin 1990). Such expectations have been buttressed by cross-country evidence showing a consistent association between women's education and the labor market returns (King and Hill 1993). As a result, education has become central in national and international strategies that address women's status and development (UNFPA 2002; UNICEF 2003; United Nations 2000).

3.1.3 **The theory of modernization**, a variant of the human capital perspective, relates employment outcomes to level of development or industrialization. Modernization theorists regard labor market expansion and increased labor supply as by-products of the modernization process. This expansion creates employment opportunities for women who make further investments in their education to take advantage of the increased demand for labor. Ultimately, the greater economic activity stemming from economic progress and industrialization reduce gender inequality in all spheres of society and thereby raise women's social status (Goldin 1990).

3.1.4 Theories of **occupational segregation** further qualify the two neoclassical economic theories outlined above. Occupational segregation theorists suggest that women can continue to be marginalized in low-skill jobs with limited prospects for advancement because of employer discrimination and institutional and labor market segmentation, but also because of socialization (Anker 1997; Anker and Heim 1997). Women are presumed to self-select into less rewarding or less prestigious occupations because they have been socialized to have lower aspirations.

3.1.5 In contrast to the perspectives reviewed above, a common explanation for women's limited labor market participation, especially in the formal sector, is **gender bias**, which is presumed to originate in patterns of social organization (Collver and Langlois 1962) based on socio-cultural norms and values that exist at the family, educational, occupational, and societal levels (Assie-Lumumba 2000; Birdsall and Sabot 1991; Boserup 1970; Stromquist 1990; Youssef 1972). Families, operating in accord with larger societal norms and in anticipation of lower returns to educating their daughters, are presumed to invest less in their daughters' than their sons' education (Stromquist 1990).

3.1.6 ***Relevance of Theoretical Perspectives in African Labor Markets***. Proponents of the cultural perspective maintain that patriarchal values transcending education, marriage, fertility, employment structure, and development stage are the decisive factors in employment gender inequality. This explanation is relevant in African societies where a strong kinship network co-exists with male dominance. In such contexts, child-rearing is largely a female responsibility.

3.1.7 According to the neoclassical economic perspective, notably human capital, the gender-employment nexus extends beyond the absolute effect of education to interactions with the demographic (marriage, family size and structure) and cultural milieu in which individuals/couples assess economic opportunities and rewards and make employment decisions (Jah 2010a). Lower long-term economic rewards (resulting from prolonged schooling and limited or unfavorable macro-economic policies) can decrease the value of education. At the same time, delayed labor market entry can reduce labor supply and raise wages overall, and bring a subsequent rise in the demand for both education and labor. Increases in the number of educated women can lead to acceptance of women's changing economic roles. However, this would not happen if increases in the number of educated women lead to greater competition for scarce jobs.

3.1.8 An assessment of the modernization perspective in the context of SSA, where an expansion in the labor market has not followed the educational and demographic transitions, is particularly salient. In countries with low labor demand but with rising educational attainment among women, female competition for scarce, prestigious jobs challenges the neo-classical theory of a monotonic link between education and employment. Instead, an inverted u-curve association (Standing 1983) or a negative relationship can prevail, as has been reported in the African literature (Siphambe 2000 for Botswana). The modernization theory assumes that development benefits men and women impartially, but the likelihood that individuals, particularly women, will be uniformly distributed across occupation sectors may not be as automatic as the theory implies.

3.1.9 The arguments of the occupational segregation proponents are important in Africa, where labor unions are weak, and markets are increasingly privatized and informalized. Training and acquisition of skills in non-traditional female occupations have been advocated to narrow the labor market gender gap. However, it is not clear if or how contemporary expansions in education have translated into employment prospects.

3.1.10 Thus, the relationship between gender and employment is not as straightforward as theory suggests. Further, these theories have typically been generated and tested in developed societies. For instance, the thesis of demographic incompatibility based on the notion of competition between work and family roles, has received less attention in Africa (see Jah 2010b and Shapiro and Tambashe 1997 for exceptions). As noted earlier, the demographic, social and macro-economic environments in which development strategies in Africa are being devised and implemented are under duress. Demographic factors are likely to vary over an individual's lifetime, yet women's unique demographic roles as wives and mothers are barely mentioned by economic theorists even as they highlight socialization and aspirations as determining factors in labor force behavior.

3.2 An Assessment of the Data

3.2.1 Data for this study are from the Botswana Labor Force Survey (BLFS), conducted in 2005/2006 by the Botswana Central Statistics Office (CSO).

The 2005/2006 BLFS data are based on a nationally representative sample of 9,760 households obtained from a two-stage stratified sampling procedure that yielded a total weighted population of 1,702,829 men and women aged 7 and above. The population comprised of 53.1% or an estimated 904,369 females and 46.9% or an estimated 798,460 males. Using a household and an individual questionnaire, data were collected on a wide range of topics, including demographic characteristics of respondents and their households, as well as indicators of employment, educational attainment and marital status[4].

3.2.2 ***Analytical Data***

3.2.2.1 The BLFS pertain to individuals aged 7 or older living in private households, excluding residents of temporary dwellings, such as tents, military barracks and school/institutional hostels. For this study, an analytical data subset was created. First, the economically active variable ("econ") was used to eliminate non-economically active persons. Next, respondents younger than age 12 were eliminated in order to remove child workers. This also eliminated most respondents who were attending school at the time of the survey (ascertained by running frequencies on the variable "educ"). Given the conceptual framework of the study in which the role of human capital in employment is examined, it is important that the analyses exclude people attending school. The remaining sample represented an estimated population of 629,394 economically active men and women. This data subset was further split by gender, yielding estimated populations of 311,264 women and 318,130 men.

3.3 Measures: Dependent, Independent and Control Variables

3.3.1 ***Dependent Variable***: The main dependent variable in this study was employment.

3.3.1.1 Employment was measured as individuals who did some work during the "reference period for cash or in kind payment (referred to as paid employees); or, who were in self-employment for profit, or family gain as well as persons temporarily absent from these activities but definitely going to return to them (e.g. on leave or sick)". "Some work" was defined as one hour or more in the reference seven days prior to the survey. Three economic sectors were considered: (i) industry, (ii) sectors and (iii) occupations.

a. The first outcome was industry, measured by all non-student economically active women and men employed in: 1) agriculture; 2) paid employment; 3) unpaid employment (family worker); 4) self-employment with employees; and 5) self-employment without employees.

i. Given that agriculture is the chief employer of the Botswana labor force, the first industry outcome was agricultural employment and coded "1" if the respondent was employed in any agricultural activity and "0" if s/he was unemployed or employed in another industry.

ii. The second dimension of industrial employment distinguished between paid employment and non-paid employment. Paid employment was coded "1" for employment in all forms of non-agricultural activity and coded "0" if unemployed or involved primarily in agriculture.

iii. Unpaid employment was coded "1" for employment in all forms of non-agricultural activity and coded "0" if a person was unemployed or involved primarily in agriculture.

iv. Several forms of paid employment were considered: employment in service industry, self-employment with employees and self-employment without employees. Each of the paid employment categories were coded "1" if a respondent was engaged in these industries and "0" if not.

[3] Botswana's population is comprised of 50.04% females and 49.96% males.

[4] For the questionnaires and a detailed discussion of the data collection, quality, coding, and classification of occupations, see the 2005/06 Botswana Labor Force Survey (BLFS) Report 2008.

b. The second outcome was occupations in crafts and related occupations, plant and machine operators, service occupations, clerical jobs, and legislators, senior officials or managers, and professionals. Each of the occupation categories was coded "1" if a respondent was engaged in them, otherwise "0."

c. The third dimension distinguished between employment in the formal and informal sectors, and coded "1" if employed in the formal sector and "0" if not.

3.3.1.2 The coding of the occupations and definition of the informal sector were derived from the 1988 International Standard Classification of Occupation (ISCO-88) and the 1993 System of National Accounts (SNA -1993), respectively, which in turn dictated the coding of the measures analyzed in the study (BLFS 2008).

3.3.1.3 Thus ten employment outcomes were examined. Detailed exploration of a few other economic domains (e.g., elementary occupations) was not embarked upon due to the fact that the selected domains adequately reflect the Botswana labor force spectrum.

3.3.2 *Independent Variable*

3.3.2.1 The main independent variable in the study is sex of the respondent. It is measured dichotomously and coded "1" if male and "2" if female (the reference).

3.3.3 *Control Variables*

3.3.3.1 Drawing from the theoretical and past studies reviewed, the study controls include several correlates of employment.

3.3.3.2 *Human capital characteristics of men and women*. The human capital characteristics were measured by educational attainment and academic training. Educational attainment is measured at four levels: (i) primary level; (ii) junior secondary; (iii) senior secondary; and (iv) non-formal/no schooling, which serves as the reference. Academic certification (training) is measured as a dummy variable, coded as "1" if respondent received any form of academic certification and "0" if not.

3.3.3.3 *Demographic characteristics of men and women*. The second set of correlates considers demographic characteristics such as family/household structural variables that affect women's capacity to engage in paid employment. The first, marital status measured, is whether the respondent is married (coded "1"), living together (coded "2"), separated/divorced/widowed (coded "3"), or single (coded "4") as the reference. Marriage is expected to create competing demands on women's time between household/marital demands and work relative while the reverse is expected for men. Conversely, separation/divorce/ widowhood are expected to compel women in particular to seek employment. The second demographic variable measures whether the respondent is the household head, and the third measures whether the respondent is the spouse of the household head. The former is hypothesized to be positively associated with employment, regardless of gender. On the other hand, being the wife of the household head can be a deterrent for outside work because of household demands and the potential reluctance of a husband that his wife should be employed outside the home.

3.3.3.4 *Structural/economic labor environment of women and men*. The third set of correlates captures structural/economic labor environment as measured by economic migration and region of residence and individual agency. Economic migration is measured by whether the respondent migrated for economic reasons (coded "1") or for non-economic reasons (coded "0") as the reference. Economic prospects will likely depend on regional-level employment opportunities. While urban settings generally offer good work opportunities, this may not hold if urbanization is not matched by growth of economic structures.

3.4 Data Strengths

3.4.1 Much empirical research on the relationship between gender and employment has focused on broad occupational classifications, in part because of data unavailability. The more detailed classifications that are possible with the BLFS data permit comprehensive analyses of several dimensions of employment. The ability to examine these very fine distinctions using nationally representative data improves on the understanding of employment behavior in the country as well as permitting generalization to the rest of the population. The measure of educational attainment is also a strength in the data. And despite a considerable number of missing cases, academic certification is also an important factor in employment analyses.

3.4.2 Data are available for some of the classic correlates of employment such as marital status and household headship. The data also include information on migration and allow regional breakdowns.

3.4.3 Thus the BLFS data complement the World Bank - sponsored Income/ Household Consumption Surveys in Regional Member Countries, which focus mainly on income. By facilitating detailed employment breakdowns, the survey helps fill gaps in the African household survey data systems and permits tracking of progress on the MDGs designed to enhance women's status and fight poverty.

3.5 Data Limitations

3.5.1 Duration of unemployment is important in employment analyses (Mincer, 1974), but measures for this factor were not adequately captured in the BLFS.

3.5.2 Because of their potential influence on time demands on mothers and on childcare needs, variables measuring fertility in terms of both family size and children's ages are crucial in employment analyses. The presence of other adult females in the household can mediate the fertility-employment link. In their study of Guinea, Glick and Sahn (2000) found that having very young children constrains a mother's ability to engage in paid employment. However, evidence from recent a study of 21 SSA countries of (a) the effect of having a first birth on a mother's employment status and (b) the influence of having another adult female in the household is mixed (Jah, 2010b).

3.5.3 Given the mixed evidence, these two factors should be considered in employment analyses. However, specific information about fertility was not collected in the 2005/06 BLFS. And because of time constraints, data modifications that could have measured the presence of other adult females were not attempted. Similarly, no information is available on access to substitute child care (formal and informal) and household help are absent and should be collected in future surveys.

3.5.4 Socio-economic factors such as household amenities and assets, the education and employment status of spouses would be useful in determining household members' (including working age women's) need to work. As well, mother's and father's education and work status provide important intergeneration information. However, these variables are also absent. In SSA, spousal co-residence has been found to be important in employment analyses, but was not asked in the survey. The dataset is also limited in terms of attitudes and other factors that can capture cultural attributes and individual agency.

3.5.5 But the most significant limitation derives from missing data. This occurs when respondents refuse to answer a question, do not know the answer, or accidentally skip an item. In the latter two cases, data are "Missing Completely at Random (MCAR)," that is, the missing data are unrelated to the values of any variables.

3.5.6 When a dataset is incomplete, the default is to analyze only cases with complete data and drop those with data missing on any variables. The result is a substantial reduction in sample size, and consequently, statistical power. In this study, the extent of missing data for some measures was as high as 98%. In such circumstances, the outcome variable may not be accurately measured, which results in estimated coefficients and standard errors from the regressions that are too low. Missing data because of refusals are not random and cannot be ignored because simply eliminating them could yield highly biased results. Special techniques are needed to address potentially non-random, Non-ignorable missing data.

3.6 Handling Missing Data

3.6.1 Imputation is often used to handle missing data, because it is conceptually simple and retains sample size. However, if missing data are non-random, imputation can bias parameter estimates (Allison 2000). To deal with missing data, this study adopted the maximum likelihood estimation technique. The utility of the maximum likelihood estimation technique permits use of observed data to calculate parameter

estimates that would most likely have resulted in the complete dataset.

3.7 Analytical Strategy

3.7.1 This study examines gender inequality in employment in Botswana and thereby updates progress the country is making toward the attainment of the MGDs. The findings will also inform the AfDB's programmes and its discussions with its Regional Member Countries.

3.7.2 Gender inequality is analyzed in ten employment outcomes. The analyses were performed in two steps. In a first step, the gross and net size (gross and net extent) of gender inequality was measured in a multivariate framework incorporating the three sets of correlates discussed above. Because the determinants for men and women are apt to differ, in the second step, key correlates were interacted with sex.

3.7.3 Maximum likelihood models were employed in an attempt to partly overcome the problem of missing cases. Logistic regression was used to model the probability of each of the ten employment outcomes as a function of gender, while controlling for several correlates.

3.8 Size of the Gender Inequality

3.8.1 To estimate the size of gender inequality in the Botswana labour force, five logistic regression models were run sequentially, incorporating the sets of correlates outlined above. The first model (model 1) estimates the gross gender inequality for each employment outcome, adjusting only for age. Model 2 adds human capital characteristics; and model 3, demographic influences; model 4, structural economic controls; and model 5 measures family background and aspirations. Thus, each model is more complex than its predecessor as equation 1 shows, where P/1-P is the probability that a man: as opposed to a woman is employed in a particular industry/sector/occupation; β_0 is the intercept (constant term); $\beta_1 G$ is the parameter estimating the gross gender inequality; $\beta_2 H$ is the parameter estimating the influence of human capital; $\beta_3 D$ is the parameter estimating the influence of demographic characteristics; $\beta_4 E$, the parameter estimating the influence of structural economic factors; and ϵ, the residual or unexplained error term.

$$\text{Log } P/(1-P) = \beta_0 + \underbrace{\beta_1 G}_{\text{Gross Inequality}} + \beta_2 H + \beta_3 D + \beta_4 E + \epsilon \qquad \text{equation. 1}$$

$$\underbrace{\qquad\qquad\qquad\qquad\qquad\qquad}_{\text{Net inequality}}$$

4 Study Analysis and Principal Findings

4.1 Descriptive Results

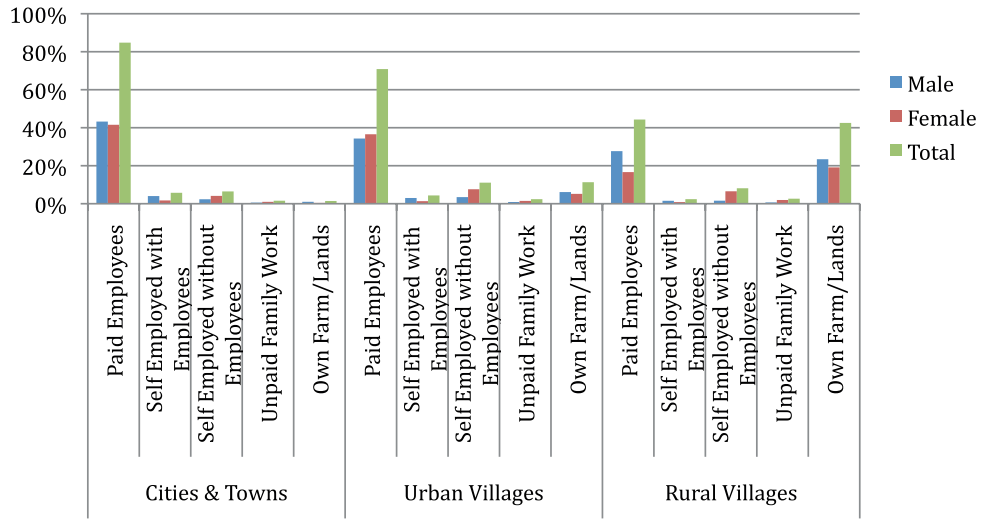
4.1.1 Of the 629, 394 economically active adults, 26.2% reside in cities and towns, 31.6% in urban villages, and 41.7% reside in rural areas.

4.1.2 Figure 1 presents the distribution of women and men across four industrial categories: paid employment, self-employment with and without employees, unpaid family work, and land/farm ownership. Paid employment accounts for large majorities of the active labor force in cities and towns (85%) and urban villages (71%), compared with 44% of the active labor force in rural villages. While the representation of women and men is comparable in cities and towns and urban villages, men dominate paid employment in rural areas (28% versus 16%). Land/farm ownership (43%) is the major economic activity in rural areas, engaging 23% of men and 19% women. Only 11% and 1% of workers own land/farm in urban villages and cities and towns, respectively; the percentages of women and men who own land/farms is similar in both regions. Self-employment without employees is the third-ranking industry, accounting for 11%, 8% and 6% of workers in urban villages, rural villages, and cities and towns, respectively. Self-employment with employees and unpaid family work represent very small percentages of the active labor force in all regions.

4.1.3 Figure 2 shows the percentage of the labour force employed in the nine occupational categories in cities and

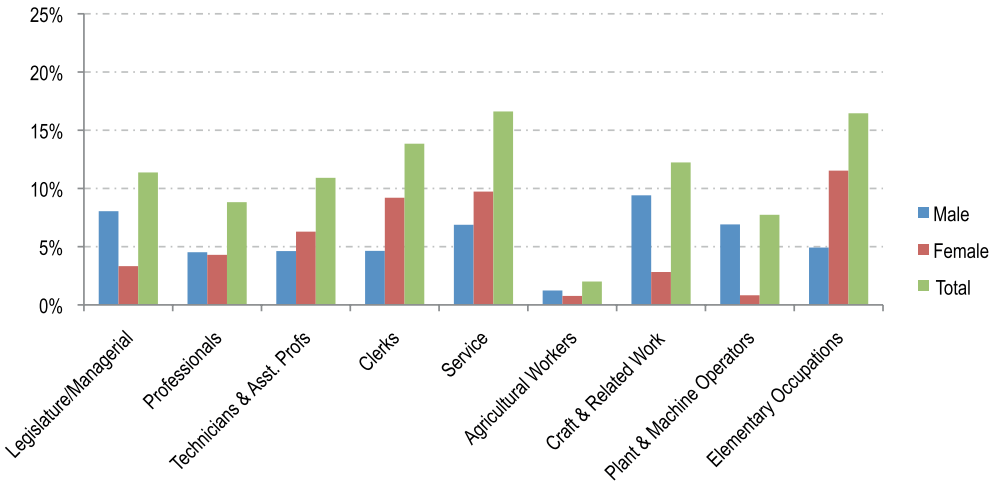
[5] The coefficients generated from the logistic regression analyses are called logits, denoting changes in the log odds for a man to be employed relative to a woman with each unit increase in the explanatory variable. To facilitate interpretation, the coefficients are transformed into odds ratios (ORs) by exponentiation (Exp (β). An odds ratio of 1.00 implies no difference between men and women in the odds of employment in the selected industry/occupation. Odds ratios greater than 1.00 mean that men are more likely than women to be employed in the selected industry/occupation. Conversely, odds ratios less than 1.00 mean that men are less likely than women to be employed in the selected industry/occupation.

Figure 1. Distribution of Economically Active Individuals Across Various Industries by Gender and Region, Botswana 2005/06



Source: Botswana Labour Force Survey (BLFS), 2005/2006.

Figure 2: Distribution of the Economically Active Population Across Various Occupations in Cities and Towns by Gender, Botswana, 2005/2006



Source: Botswana Labour Force Survey (BLFS), 2005/2006.

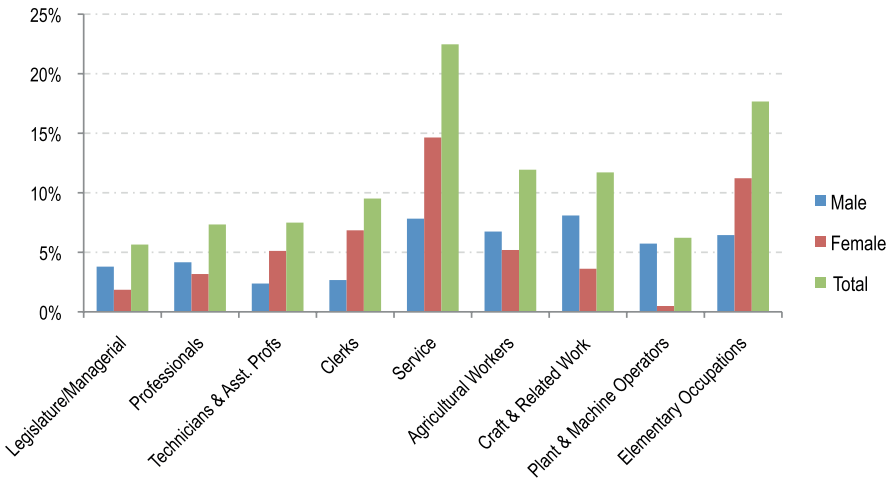
towns. Service employment (17%) and elementary occupations (16%) are the chief employers, followed by clerical work (14%), craft and related work (12%), and technical and associate professions (11%). Legislators, senior officials or managers, and professionals, respectively, comprise 11% and 8% of workers in cities and towns. The agricultural sector accounts for only 2% of workers in this region. Women constitute the majority of workers in elementary occupations (12% out of 16%), services (10% out of 17%), clerical occupations (9% out of 14%), and technical and associate professions (6%). They are less likely than men to be plant and machine operators (1%), agricultural workers(1%), legislators, senior officials or managers (3%), or professionals (4%).

4.1.4 Figure 3 presents the distribution of the nine occupational categories in urban villages. As in cities and towns, service employment (22%) and elementary occupations (18%) are the chief employers, followed by craft and related work (12%) and agricultural work (12%). The remaining workers in this region are distributed among clerical occupations (10%), technical and associate occupations (7%), professional occupations (7%), legislative occupations (6%), and plant and machine operations (6%). Women make up the majority in the service, elementary, and clerical occupations, and of technicians and associate professionals. On the other hand, more men than women are employed in crafts and related work and as plant and machine operators.

4.1.5 Figure 4 shows occupational categories by gender in rural areas. Agricultural work dominates, with 45% of workers, nearly half of whom are women. Elementary occupations account for 22% of workers, with men outnumbering women two to one. Very few members of the rural labor force are employed in other occupations.

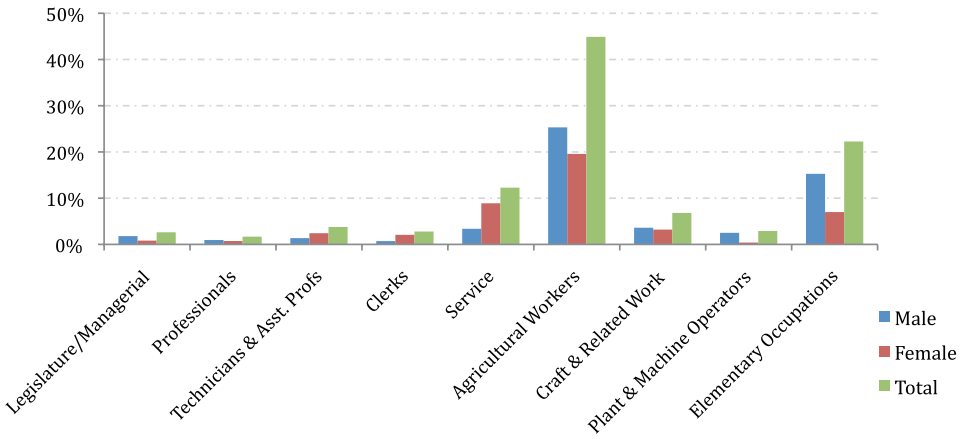
4.1.6 In summary, the service sector is the dominant economic activity in urban areas (cities, towns and urban villages alike), with women over-represented. Agriculture dominates in rural settings, with men slightly outnumbering women. The predominance of women in services and elementary occupations, and their low representation in occupations deemed secure and profitable, will be examined in more detail in the multivariate results.

Figure 3. Distribution of Economically Active Population Across Various Occupations in Urban Villages by Gender, Botswana 2005/2006



Source: Botswana Labour Force Survey (BLFS), 2005/2006.

Figure 4. Distribution of Economically Active Population Across Various Occupations in Rural Villages by Gender, Botswana, 2005/2006



Source: Botswana Labour Force Survey (BLFS), 2005/2006.

4.2 Multivariate Analyses and Principal Findings

4.2.1 To explain how gender relates to employment, multivariate analysis is necessary. A series of multivariate logistic regression models[6] were run sequentially to quantify gross and net gender inequality in: 1) agricultural employment; 2) unpaid family work; 3) paid employment; 4) self-employment with employees; 5) self-employment without employees, and in five occupations: 1) craft and related occupations; 2) plant and machine operators; 3) services; 4) clerical occupations; and 5) legislature/managerial, and professional occupations.

4.2.2 ***Gender Inequality in Industry***. For each outcome, models of gross inequality (model 1) control only for age. Models 2 to 4 measure net inequality and control sequentially for the three sets of correlates. Model 2 controls for human capital (educational attainment and post-secondary academic training). Model 3 controls for demographic factors (marital status, household headship, and whether the respondent is the spouse of the household head). Model 4 adds structural and economic factors (economic migration and region of residence).

4.2.3 **Table 1** presents odds ratios for the gross and net inequality between men and women in all the above employment outcomes. For brevity, the table reports the main effects of gender only (the independent variable),[7] and not those of the correlates. The detailed results are annex tables 1 to 20. (Annex tables are available on the AfDB data portal).

4.2.4 ***Agricultural Employment***. Men are 27% more likely than women to be agricultural workers (Model 1). When differences in human capital are taken into account (Model 2), men are 23% more likely than women to be employed in agriculture. And when demographic and structural factors are taken into account (Models 3 and 4), this gender inequality not only persists, but is intensified, with men being 39% more likely than women to be agricultural workers. These multivariate results are consistent with the descriptive findings.

4.2.5 Paid employment is the outcome considered to be more critical in addressing gender inequality in the labour market.

4.2.6 ***Paid Employment***. Model 1 indicates that men are 40% more likely than women to be paid workers. Further, as reflected in Model 2, men's odds of paid employment rise when education and academic certification are taken into account. In Models 3 to 4, the difference is slightly reduced, with men 29% and 17% more likely than women to be paid workers. Thus, while gender inequality persists, some of it is due to demographic factors and region of residence.

[6] The coefficients generated from the logistic regression analyses are called logits, denoting changes in the log odds for a male to be employed relative to a female with each unit increase in the explanatory (independent) variable. To facilitate interpretation, the coefficients are transformed into odds ratios (ORs) by exponentiation (i.e., Exp (β). An odds ratio of one implies no difference in the odds of employment between men and women. Odds ratios greater than one mean that men are more likely than women to be employed in the industry/occupation in question. Conversely, odds ratios smaller than one suggest that men are less likely than women to be employed in the industry/occupation in question.

[7] Model significance is determined by looking at the information on "Testing Global Null Hypothesis" that Beta=0. Very small p-values for the Chi-Squares indicate model significance and that at least one of the coefficients is not zero. Significance is evaluated at three levels: $p<0.001$ denoted by *** means the relationship is highly significant below the 99% level; $p<0.01$ denoted by **means the relationship is significant at the 99% level; $p<0.05$ denoted by * means the relationship is significant at the 95% level; and $p<0.10$ denoted by #means the relationship is marginally significant at the 90% level.

Table 1. Odds Ratios of Gross and Net Size of Gender Inequality in Various Industries and Occupations, Botswana, 2005/2006

	Model 1 Gross Gender Inequality			Model 2 Human Capital			Model 3 Demographic			Model 4 Structural/Economic Factors		
Correlates	**Odds Ratio**	**SE**	**Sig**	**Odds Ratio**	**SE**	**Sig**	**Odds Ratio**	**SE**	**Sig**	**Odds Ratio**	**SE**	**Sig**
Agricultural Employment												
Male	1.269	0.007	***	1.227	0.007	***	1.305	0.008	***	1.386	0.008	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Unpaid Family Work												
Male	0.422	0.020	***	0.419	0.020	***	0.464	0.021	***	0.499	0.021	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Paid Employment												
Male	1.399	0.005	***	1.440	0.005	***	1.291	0.006	***	1.165	0.006	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Self Employment With Employees												
Male	2.200	0.015	***	2.160	0.016	***	2.333	0.017	***	2.435	0.017	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Self Employment Without Employees												
Male	2.909	0.011	***	2.964	0.011	***	3.050	0.012	***	2.720	0.012	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Craft and Related Occupations												
Male	9.462	0.020	***	9.618	0.020	***	8.842	0.021	***	8.595	0.021	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Plant and Machine Operators												
Male	1.037	0.007	***	1.034	0.007	***	0.989	0.008	#	0.887	0.008	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Services												
Male	0.462	0.008	***	0.496	0.008	***	0.489	0.008	***	0.499	0.008	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Clerical Occupations												
Male	0.417	0.011	***	0.437	0.011	***	0.420	0.012	***	0.418	0.012	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Legislature/Managerial and Professional Occupations												
Male	1.796	0.009	***	1.746	0.010	***	1.739	0.011	***	1.747	0.011	***
Female (ref)	…	…	…	…	…	…	…	…	…	…	…	…

*** Significantly different from reference category (p<0.001)
** Significantly different from reference category (p<0.01)
* Significantly different from reference category (p<0.05)
# Significantly different from reference category (p<0.10)
… Not applicable
(ref) Reference category
Source: Botswana Labour Force Survey (BLFS), 2005/2006.

4.2.7 ***Unpaid family work***. Model 1 shows a sharp gross gender inequality in unpaid work—women are 58% more likely than men to be unpaid family workers. Adjustments for human capital, demographic factors, and economic/structural correlates do not change the substantive conclusions, a result that is consistent with the descriptive findings.

4.2.8 ***Self-Employment with Employees***. According to Model 1, the gross inequality in self-employment with employees in favour of men is substantial, and does not change when human capital, demographic factors, and structural/economic correlates are taken into account.

4.2.9 ***Self-Employment without Employees***. Like self-employment with employees, the gross and net gender inequality in self-employment without

employees is large. The disadvantage faced by women increases when the effects of human capital and demographic factors are taken into account, and only slightly decreases when structural or economic factors are considered.

4.2.10 ***Gross and Net Size of the Gender Inequality in Occupations***. In this section the analysis examines the extent of gender inequality in occupation outcomes – plant and machine operations, craft and related occupations, services, clerical occupations, and legislature/managerial, and professional occupations.

4.2.11 ***Plant and Machine Operators***. According to Model 1, men are only about 4% more likely than women to be plant and machine operators. Moreover, the direction of the inequality changes with adjustments for demographic and structural/economic factors. Based on Model 4, men are 11% less likely to work as plant and machine operators. Thus, much of the inequality in this occupational sector tends to be associated with demographic characteristics of individuals and economic/structural factors. While consistent with the descriptive results, this finding is contrary to the literature, which suggests that men have a greater likelihood than women of being plant and machine operators. The results of the earlier studies may be tied to failure to fully control for demographic and economic/structural factors.

4.2.12 ***Craft and Related Occupations***. Unlike the situation for plant and machine operations, the gross inequality in craft and related occupations is large and to the advantage of men. The net inequality remains large even after adjustments for the three set of correlates.

4.2.13 ***Services***. Models 1 through 4 indicate that women have a greater probability of being employed in service occupations compared with men—54% gross inequality (model 1) and 50% (model 4) net inequality. These multivariate results corroborate the descriptive findings.

4.2.14 ***Clerical Occupations***. The same picture emerges for clerical occupations, with the estimates in the gross (Model 1) and in the subsequent models indicating that men's odds of clerical employment are significantly lower than those of women. Again, these multivariate findings corroborate the descriptive findings.

4.2.15 ***Legislature/Managerial, and Professional Occupations***. Model 1 indicates that men are about 80% more likely than women to hold legislative or management and professional occupations, the most secure and profitable that were examined in the survey. As well, the situation changes little with adjustments for human capital, demographic and structural/economic factors.

4.2.16 ***Summary of Initial Multivariate Findings***. Overall, the multivariate results are consistent with the descriptive findings for agricultural employment, other industries and occupations. Men are significantly more likely than women to be agricultural workers. And among those not engaged in agriculture, men are more likely than women to be paid employees, self-employed with or without employees, craft and related workers, and legislators and professionals. On the other hand, the descriptive and multivariate results consistently show that women are more likely than men to be service workers and clerks.

4.2.17 The only difference between the descriptive and multivariate results emerges in plant and machine operations. While the descriptive results suggest that, regardless of region, men are more likely than women to be employed in this category, this is due to failure to account for potentially demographic and structural/economic factors. When these factors are considered in a multivariate framework, women are more likely than men to work as machine and plant operators. This finding is contrary to the conventional belief that masculine physiology is more appropriate for this type of work.

4.2.18 The analysis in the next section examines the differential determinants of women's and men's employment status that explain the inequality in paid and self-employment and in occupations.

4.3 Determinants of Gender Inequality

4.3.1 The factors that influence employment status differ for men and women. Moreover, the association between a particular factor and employment may not be the same for men and women, and thus, may contribute to gender inequality in different ways. For example, the same factor might have a positive association with a specific aspect of employment for men, but a negative association for women, or vice versa. In Tables 2 to 6, the determinants of women's and men's employment status are examined in an attempt to understand some of these mechanisms. For conciseness, only the net findings from the final and most complex model (Model 4) are discussed. The full set of models (1 through 4) showing the separate determinants of employment for women and men are

presented in annex Tables 1 through 20. (Annex tables 1-20 are available on the AfDB data portal).

4.3.2 The regression results for various industries and occupations indicate gender differences in employment and provide initial evidence about the drivers of gender inequality in Botswana.

4.3.3 ***Unpaid family work and Paid Employment***. Table 2, which presents the findings for unpaid family work and paid employment, reveals substantive differences between women and men, and also between unpaid and paid employment. Gender differences in senior secondary educational attainment, the marital status "living together," and region of residence are influential for unpaid family work. Young age (12 to 19), senior secondary educational attainment, and the marital status "living together" are important for paid employment. The subsequent analyses deal with the mechanisms that may result in gender-differentiated effects on paid and unpaid employment. The results are examined within the framework of theoretical expectations.

Table 2. Odds Ratios of Determinants of Unpaid Family Work and Paid Employment, Women and Men, Botswana 2005/2006

	Unpaid Family Work Model 4						Paid Employment Model 4					
	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig
Correlates	Female			Male			Female			Male		
AGE												
Youth (12-19 yrs)	3.539	0.062	***	10.024	0.109	***	0.762	0.026	***	1.377	0.022	***
Young Adults (20-29 yrs)	2.648	0.053	***	4.953	0.105	***	1.122	0.017	***	1.937	0.016	***
Adults (30-49 yrs)	1.283	0.047	***	1.817	0.099	***	2.002	0.014	***	2.516	0.012	***
Older Adults (50+ yrs) (ref)	…	…	…	…	…	…	…	…	…	…	…	…
HUMAN CAPITAL												
Primary Schooling	0.800	0.054	***	0.853	0.067	*	2.967	0.019	***	1.370	0.015	***
Junior Secondary	0.871	0.047	*	0.592	0.063	***	2.795	0.017	***	1.235	0.014	***
Senior Secondary	1.220	0.044	***	0.650	0.063	***	1.547	0.015	***	0.976	0.012	*
No Schooling (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Academic Training												
Training	0.911	0.034	**	0.515	0.055	***	2.167	0.011	***	1.546	0.011	***
No Training (ref)	…	…	…	…	…	…	…	…	…	…	…	…
DEMOGRAPHIC FACTORS												
Marital Status												
Married	1.064	0.037	#	1.443	0.070	***	0.673	0.012	***	0.756	0.012	***
Living Together	0.538	0.047	***	1.329	0.066	***	0.791	0.013	***	1.195	0.013	***
Separated, Divorced or Widowed	0.401	0.097	***	0.000	0.105	ns	0.745	0.019	***	0.580	0.026	***
Household Head	0.395	0.034	***	0.368	0.053	***	1.610	0.010	***	1.803	0.011	***
Spouse of Household Head	1.208	0.029	***	1.195	0.039	***	0.772	0.013	***	0.687	0.014	***
Single (ref)	…	…	…	…	…	…	…	…	…	…	…	…
ECONOMIC & STRUCTURAL FACTORS												
Economic Migration	0.245	0.044	***	0.270	0.054	***	2.718	0.009	***	2.290	0.009	***
REGION												
Cities and Towns	0.610	0.035	***	1.590	0.049	***	2.409	0.011	***	1.919	0.010	***
Other Urban Areas	0.533	0.027	***	1.343	0.040	***	1.846	0.010	***	1.428	0.011	***
Rural Areas (ref)	…	…	…	…	…	…	…	…	…	…	…	…

*** Significantly different from reference category (p<0.001)
** Significantly different from reference category (p<0.01)
* Significantly different from reference category (p<0.05)
# Significantly different from reference category (p<0.10)
ns Not significantly different from reference category (p<0.10 or better)
… Not applicable
(ref) Reference category
Source: Botswana Labour Force Survey (BLFS), 2005/2006.

4.3.4 ***Human Capital Effects***. The results for unpaid employment in Table 2 are generally consistent with the human capital perspective. Lower levels of schooling, specifically primary and junior secondary level education as well as senior secondary education (men only), are associated with lower odds of unpaid employment among both women and men. On the other hand, women with senior secondary education are more likely than those with non-formal education or no schooling to be unpaid workers.

4.3.5 With regard to paid employment, education benefits women, although the relationship is strongest at lower levels of schooling. This does not fully support the hypothesized "U" shaped link between education and employment (Standing 1983). Moreover, this is particularly evident among men, who, as they acquire more education, become less likely than their peers without formal schooling to be paid workers. Thus, the evidence in support of the positive role of human capital is less than compelling, and warns against relying on education as the main vehicle for economic security.

4.3.6 ***Demographic Effects***. Marriage and being the spouse of a household head are associated with higher odds of unpaid employment for both women and men, although the impact is considerably stronger for men. Conversely, the odds for "living together" and "separated, divorced, or widowed" indicate that they impact gender inequality. The former hinders employment prospects for women and enhancing prospects for men; the latter hinders prospects for women, but is unrelated to men's employment behavior. The only demographic factor that appears to impact gender inequality in paid employment is "living together," which is associated with higher odds of men having such employment, but lower odds for women.

4.3.7 ***Structural/Economic Factors***. Migration and the reasons for doing so do not impact women and men differently for either unpaid or paid employment. By contrast, the relationship between region of residence and unpaid employment does differ for men and women: men who live in both cities and towns and in other urban areas are more likely to engage in unpaid work relative to their rural counterparts, while the reverse holds for women.

4.3.8 ***Self-Employment with and without Employees***. Table 3 shows factors that contribute to gender inequality in self-employment with and without employees. The main influences are demographic factors and region of residence.

4.3.9 Differences in women's and men's region of residence are influential for self-employment with employees, but not for self-employment without employees. Gender differences in demographic factors are important for both occupational categories. "Living together" and "separated, divorced or widowed" are associated with gender inequality in self-employment with employees. For self-employment without employees, as well as differences in "separated, divorced or widowed," differences in "marriage" and in the sex of the household head are important.

4.3.10 ***Human Capital Effects***. The estimates in Table 3 indicate that education and training are associated with significantly higher odds of self-employment with and without employees. The strength of the association, however, tends to decline with more education. In the absence of any differential gender impact, no strong explanation for the gender inequality in self-employment with and without employees is apparent.

4.3.11 ***Demographic Effects***. Marriage boosts the odds of self-employment with employees for both women and men, and so does not appear to contribute to gender inequality. Being the household head or the spouse of the household head is not a factor in inequality either, as it is negatively related to self-employment with employees for both sexes.

Table 3. Odds Ratios of Determinants of Self-Employment with Employees and Self-Employment without Employees, Women and Men, Botswana, 2005/2006

	Self Employment with Employees						Self Employment without Employees					
	Model 4						Model 4					
	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig
Correlates	Female			Male			Female			Male		
AGE												
Youth (12-19 yrs)	0.097	0.137	***	0.142	0.109	***	1.318	0.042	***	1.846	0.062	***
Young Adults (20-29 yrs)	0.106	0.055	***	0.478	0.037	***	1.245	0.024	***	1.201	0.037	***
Adults (30-49 yrs)	0.428	0.034	***	0.847	0.026	***	0.824	0.017	***	0.939	0.028	*
Older Adults (50+ yrs) (ref)	…	…	…	…	…	…	…	…	…	…	…	…
HUMAN CAPITAL												
Primary Schooling	7.850	0.069	***	2.977	0.039	***	3.820	0.029	***	2.392	0.037	***
Junior Secondary	4.580	0.064	***	1.752	0.040	***	1.633	0.021	***	1.654	0.032	***
Senior Secondary	2.326	0.058	***	1.769	0.034	***	1.173	0.017	***	1.352	0.026	***
No Schooling (ref)	…	…	…	…	…	…	…	…	…	…	…	…
ACADEMIC TRAINING												
Training	1.322	0.035	***	1.808	0.023	***	1.351	0.020	***	1.155	0.026	***
No Training (ref)	…	…	…	…	…	…	…	…	…	…	…	…
DEMOGRAPHIC FACTORS												
Marital Status												
Married	2.322	0.037	***	1.996	0.024	***	0.682	0.017	***	1.113	0.028	***
Living Together	0.872	0.062	*	1.351	0.031	***	0.635	0.018	***	0.803	0.028	***
Separated, Divorced or Widowed	2.100	0.049	***	0.419	0.100	***	1.056	0.025	*	0.631	0.050	***
Household Head	0.707	0.032	***	0.831	0.027	***	0.026	0.015	***	0.678	0.030	***
Spouse of Household Head	0.691	0.055	***	0.827	0.039	***	1.165	0.022	***	0.615	0.034	***
Single (ref)	…	…	…	…	…	…	…	…	…	…	…	…
ECONOMIC & STRUCTURAL FACTORS												
Economic Migration	0.511	0.031	***	0.861	0.020	***	1.867	0.016	***	2.166	0.021	***
REGION												
Cities and Towns	1.246	0.037	***	1.529	0.025	***	0.964	0.018	*	0.377	0.027	***
Other Urban Areas	0.979	0.034	ns	1.390	0.024	***	0.844	0.014	***	0.368	0.023	***
Rural Areas (ref)	…	…	…	…	…	…	…	…	…	…	…	…

*** Significantly different from reference category (p<0.001)
** Significantly different from reference category (p<0.01)
* Significantly different from reference category (p<0.05)
# Significantly different from reference category (p<0.10)
ns Not significantly different from reference category (p<0.10 or better)
… Not applicable
(ref) Reference category
Source: Botswana Labour Force Survey (BLFS), 2005/2006.

However, "separated, divorced, widowed" and "living together" widen the gap in favor of women. The picture is different for self-employment without employees. Marriage appears to intensify the inequality in favor of men by boosting their likelihood of being engaged in this industry, while decreasing the likelihood for women by about 32%. By contrast, "separated, divorced, widowed" and being the spouse of a household head narrow the inequality in men's favor by increasing women's likelihood of self-employment without employees and while reducing that of men.

4.3.12 ***Structural/Economic Factors***. In general, economic migration is associated with higher odds of self-employment without employees for both sexes. However, male and female economic migrants have significantly low odds of self-employment with employees. Inequality within this type of employment is intensified against women residing in other urban areas, relative to cities and towns or rural areas. On the other hand, no dif-

ferential effect emerges in cities and towns, where the odds of self-employment with employees are high for both women and men.

4.3.13 ***Craft and Related Occupations and Plant and Machine Operations***. Table 4 shows that for crafts and related occupations and for plant and machine operations, the underlying factors in gender inequality are varied despite some overlap. For craft and related occupations, differences in all three levels of educational attainment are influential, while only the difference in senior secondary level is influential for plant and machine operations. The differences in all the three marital statuses are influential in gender inequality in craft and related occupations. For plant and machine operations, only the difference in the "living together" status is influential in favor of men. Being a household head increases the odds of employment in craft and related occupations and plant and machine operations for both women and men. Thus, household headship does not contribute to gender inequality in either occupational category. On the other hand, urban residence is associated with increased odds of employment in plant and machine operations among women and probably has the most important influence on gender inequality in this occupational category.

4.3.14 ***Human Capital Effects***. The multivariate results in Table 1 show gender inequality in men's favor in craft and related occupations and in plant and machine operations. However, the results in Table 4 reveal that educational attainment at all levels is positively related to women's employment in craft and related occupations, but has a negative effect on men's employment in this occupation. As well, for women, the likelihood of employment in craft and related occupations sharply increases with each additional level of education. With respect to plant and machine operations, the collective analysis (Table 1) indicates a slight gender gap in favor of men. However, in the gender-differentiated results (Table 4), this relationship is reversed in favor of women with senior secondary school. The finding that senior secondary education increases women's odds of employment in this occupation while reducing the odds for men may indicate that men with higher levels of education move to other occupation categories. At lower levels of education, there appears to be no evidence of gender inequality.

4.3.15 ***Demographic Effects***. Marriage and living together appear to reduce women's odds of employment in craft and related occupations, while increasing the odds for men. This is consistent with earlier results (Figures 2 and 3 and Table 1), although the advantage is confined to urban areas. By contrast, separation/divorce/widowhood increase women's odds of employment in craft and related occupations, but reduce the odds for men. Household headship is not likely to influence inequality, since it is related to higher odds of employment in these occupations for both sexes. For employment in the plant and machine operation occupations, marriage and separation/divorce/widowhood significantly reduce the odds for both men and women, and therefore, have no impact on the female advantage reported in Table 1. Similarly, household headship benefits men and women almost equally in employment in plant and machine operations. The influential demographic factor in gender inequality for employment in plant and machine operations is living together, which is associated with decreased odds for women, but increased odds for men.

Table 4. Odds Ratios of Determinants of Employment in Craft and Related Occupations and Plant and Machine Operations, Women and Men, Botswana, 2005/2006

	Craft & Related						Plant & Machine Operators					
	Model 4						Model 4					
	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig
Correlates	**Female**			**Male**			**Female**			**Male**		
AGE												
Youth (12-19 yrs)	0.000	0.044	ns	0.000	0.044	ns	1.577	0.032	***	2.455	0.027	***
Young Adults (20-29 yrs)	3.500	0.082	***	1.476	0.028	***	1.448	0.021	***	2.413	0.021	***
Adults (30-49 yrs)	1.770	0.071	***	1.699	0.021	***	1.808	0.017	***	1.917	0.017	***
Older Adults (50+ yrs) (ref)	...	...	...	...	...	...	...	...	...	...	...	...
HUMAN CAPITAL												
Primary Schooling	2.164	0.195	***	0.289	0.028	***	0.212	0.025	***	0.256	0.023	***
Junior Secondary	8.233	0.187	***	1.014	0.025	ns	0.687	0.019	***	0.512	0.017	***
Senior Secondary	12.973	0.184	***	1.350	0.021	***	1.096	0.016	***	0.707	0.014	***
No Schooling (ref)	...	...	...	...	...	...	...	...	...	...	...	...
ACADEMIC TRAINING												
Training	2.130	0.047	***	2.067	0.017	***	0.282	0.019	***	0.190	0.022	***
No Training (ref)	...	...	...	...	...	...	...	...	...	...	...	...
DEMOGRAPHIC FACTORS												
Marital Status												
Married	0.349	0.078	***	1.845	0.019	***	0.596	0.016	***	0.448	0.017	***
Living Together	0.337	0.083	***	1.471	0.021	***	0.713	0.017	***	1.056	0.015	***
Separated, Divorced or Widowed	2.458	0.061	***	0.899	0.052	*	0.835	0.022	***	0.469	0.037	***
Household Head	1.557	0.054	***	1.226	0.022	***	1.277	0.013	***	1.259	0.015	***
Spouse of Household Head							0.871	0.018	***	0.584	0.019	***
Single (ref)	...	...	...	...	...	...	...	...	...	...	...	...
ECONOMIC AND STRUCTURAL FACTORS												
Economic Migration	2.787	0.044	***	1.199	0.016	***	1.735	0.012	***	1.871	0.012	***
REGION												
Cities and Towns	1.282	0.049	***	2.913	0.019	***	2.351	0.015	***	0.412	0.016	***
Other Urban Areas	0.873	0.051	**	2.481	0.019	***	1.708	0.013	***	0.538	0.013	***
Rural Areas (ref)	...	...	...	...	...	...	...	...	...	...	...	...

*** Significantly different from reference category (p<0.001)
** Significantly different from reference category (p<0.01)
* Significantly different from reference category (p<0.05)
# Significantly different from reference category (p<0.10)
ns Not significantly different from reference category (p<0.10 or better)
… Not applicable
(ref) Reference category
Source: Botswana Labour Force Survey (BLFS), 2005/2006.

4.3.16 ***Structural/Economic Factors***. Table 4 also shows that economic migration is not significantly related to employment in craft and related occupations or in plant and machine operations for either women or men. However, residence in cities and towns raises the odds of employment in craft and related occupations for both women and men. The opposite is observed for other urban areas where men's odds of working in craft and related occupations are increased, while the odds for women are reduced.

4.3.17 ***Services and Clerical Occupations***. The data in Table 1 and Figures 2 to 4 indicate that compared with women, men are less likely to be employed in service and clerical occupations. The gender-differentiated results in Table 5 confirm the gender inequality in favor of women in the service sector, and show that this be attributed to youth (aged 12 to 19). Older women and men have equal odds of holding service sector jobs, and thus, older age groups do not

contribute to the advantage enjoyed by women in general. However, women's advantage in clerical occupations is attributable to older age groups. Compared with women aged 50 or older, the odds of clerical employment are significantly high for women in the 20 to 49 age range, but significantly low for younger women. Men in all age groups up to 49 are significantly are less likely to work in clerical jobs compared with men aged 50 or older.

4.3.18 ***Human Capital Effects***. The results in Table 5 suggest that human capital factors have no bearing on women's advantage in service and clerical occupations, since for both sexes, all levels of education are associated with significantly higher odds of employment in such jobs, compared with the odds for people who have no schooling. However, for both sexes, the odds of clerical employment, while still significantly high, decline at higher levels of attainment.

4.3.19 ***Demographic Effects***. The gender-disaggregated results for both service and clerical occupations shown in Table 5 further highlight the influence of demographic factors on gender inequality. Marriage and being the spouse of the household head have no effect on women's greater odds of employment in services occupations; the odds ratios for both sexes are significantly low. "Living together" is associated with significantly high odds of employment in service occupations for both women and men. On the other hand, the odds of services employment are significantly low for women whose marital status is separation/divorced/widowhood, but significantly high for men with this marital status. Household headship is not related to women's likelihood of holding a services job, but men who are household heads have significantly high odds. The overall influence of the two sets of demographic factors is to reduce women's advantage in service occupations.

4.3.20 With regard to clerical occupations, marriage and household headship have no impact on inequality, because for both sexes, the former is associated with low odds of employment, while the latter is associated with significantly high odds. The odds of clerical employment are significantly low for women who are separated/divorced/widowed, but significantly high for their male counterparts. Being the wife of the household head is not significantly related to clerical employment, but the odds for husbands of household heads are significantly high.

4.3.21 ***Structural/Economic Factors***. Economic migration reduces women's likelihood holding service occupations, while increases the likelihood for men. However, structural or economic factors have no effect on gender inequality in clerical occupations, as both male and female economic migrants have high odds of employment in this occupation category.

Table 5: Odds Ratios of Determinants of Employment in Service and Clerical Occupations, Women and Men, Botswana, 2005/2006

	Service Occupations Model 4						Clerical Occupations Model 4					
	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig
	Female			Male			Female			Male		
AGE												
Youth (12-19 yrs)	1,402	0,028	***	0,923	0,038	*	0,301	0,067	***	0,154	0,075	***
Young Adults (20-29 yrs)	1,407	0,020	***	1,077	0,027	**	1,107	0,034	**	0,398	0,042	***
Adults (30-49 yrs)	1,239	0,016	***	1,106	0,023	***	1,688	0,031	***	0,657	0,035	***
Older Adults (50+ yrs) (ref)	…	…	…	…	…	…	…	…	…	…	…	…
HUMAN CAPITAL												
Primary Schooling	0,956	0,022	*	2,137	0,026	***	15,748	0,059	***	9,193	0,047	***
Junior Secondary	1,538	0,019	***	2,578	0,024	***	11,361	0,058	***	6,013	0,045	***
Senior Secondary	1,529	0,017	***	1,430	0,023	***	2,636	0,060	***	1,569	0,047	***
No Schooling (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Academic Training												
Training	0,592	0,014	***	0,529	0,017	***	1,086	0,016	***	0,273	0,025	***
No Training (Ref)	…	…	…	…	…	…	…	…	…	…	…	…
DEMOGRAPHIC FACTORS												
Marital Status												
Married	0,949	0,014	***	0,702	0,020	***	0,867	0,019	***	0,484	0,030	***
Living Together	1,033	0,015	*	1,121	0,019	***	1,020	0,021	ns	0,777	0,031	***
Separated, Divorced or Widowed	0,674	0,023	***	1,134	0,043	**	0,771	0,035	***	1,269	0,060	***
Household Head	1,001	0,012	ns	1,205	0,018	***	1,295	0,016	***	1,451	0,028	***
Not Head of Household	0,956	0,015	**	0,869	0,022	***	0,975	0,022	ns	1,156	0,034	***
Single (ref)	…	…	…	…	…	…	…	…	…	…	…	…
ECONOMIC /STRUCTURAL FACTORS												
Economic Migration	0,886	0,011	***	1,135	0,014	***	1,181	0,014	***	1,076	0,022	***
Region												
Rural Areas (ref)	…	…	…	…	…	…	…	…	…	…	…	…
Cities and Towns	1,147	0,014	***	2,122	0,018	***	2,240	0,019	***	5,574	0,030	***
Other Urban Areas	1,384	0,011	***	2,416	0,016	***	1,724	0,019	***	3,102	0,031	***

*** Significantly different from reference category (p<0.001)
** Significantly different from reference category (p<0.01)
* Significantly different from reference category (p<0.05)
# Significantly different from reference category (p<0.10)
ns Not significantly different from reference category (p<0.10 or better)
… Not applicable
(ref) Reference category
Source: Botswana Labour Force Survey (BLFS), 2005/2006.

4.3.22 ***Legislature/Managerial, and Professional Occupations and Agricultural Employment***. Table 6 presents the determinants of access for women and men to legislature/managerial, and professional occupations and to agricultural employment. As might be expected, the factors that contribute to gender inequality in the two occupational categories differ greatly. While for agricultural employment, only two factors are associated with gender inequality (senior secondary educational attainment and "living together"), seven factors are associated with gender inequality in the legislature/managerial, and professional occupations, the largest number of influential factors for any occupation category.

4.3.23 ***Human Capital Effects***. Education raises the odds of employment in legislature/managerial, and professional occupations, but the effect is strongest at the primary school level and declines substantially for both sexes, but particu-

larly women, as they acquire more schooling. On the other hand, the certification is unrelated to men's employment in these occupations, but is associated with higher odds for women. The differential gender effect of certification suggests that credentialism may be operating for women but not for men.

4.3.24 ***Demographic Effects***. In Table 6, the positive relationship between marriage and employment in legislature/managerial and professional occupations for women can be interpreted as reducing gender inequality in favor of men. Marriage is associated with significantly high odds of employment in professional occupations for women, but significantly low odds for men. This finding appears to be contrary to conventional wisdom, but it is consistent with a recent study that of the sources of change in women's employment since the early 1990s (Jah 2010a, 2010b). In this study, regression decompositions to apportion and quantify the relative weight of the different sources of change in the 21 Sub-Saharan countries studied revealed that marriage, with fertility operating through marriage, and not human capital, was the driver of the observed changes in women's employment in 20 of the 21 countries.

4.3.25 This finding, which demonstrates the importance of nuances within marital relations interacting with larger cultural norms that govern the organization of work in the region, deserves continued scrutiny in gender and employment research.

4.3.26 Separation/Divorce/Widowhood has the same effect as marriage, perhaps partly because more educated women tend to put a high premium on career development, and partly because prolonged schooling and postsecondary education limit the marriage market for women. While marriage and the dissolution of marriage tend to reduce men's advantage in professional employment, the growing incidence of "living together" and male household headship act in the opposite and reinforce men's advantage. This is understandable in Botswana where male household headship entails financial obligations for the household.

4.3.27 ***Structural/Economic Factors***. Table 6 further reveals that structural and economic factors—economic migration and region of residence—on which economic opportunity depend are also significantly related to employment in professional occupations. Urban residence is associated with significantly high odds of employment in legislature/managerial, and professional occupations for women, but significantly low odds for men.

Table 6: Odds Ratios of Determinants of Access to Legislature/Managerial, and Professional Occupations, Women and Men, Botswana, 2005/2006

	Legislature/Managerial and Professional Occupations						Agricultural Occupations					
	Model 4						Model 4					
	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig	Odds Ratio	SE	Sig
	Female			Male			Female			Male		
AGE												
Youth (12-19 yrs)	0.000	0.025	ns	0.000	0.044	ns	0.442	0.033	***	0.549	0.025	***
Young Adults (20-29 yrs)	0.281	0.033	***	1.257	0.044	***	0.356	0.022	***	0.308	0.020	***
Adults (30-49 yrs)	0.606	0.028	***	1.359	0.038	***	0.301	0.015	***	0.272	0.015	***
Older Adults (50+ yrs) (ref)	…	…	…	…	…	…	…	…	…	…	…	…
HUMAN CAPITAL												
Primary Schooling	20.628	0.065	***	9.420	0.127	***	0.246	0.029	***	0.455	0.022	***
Junior Secondary	4.272	0.065	***	5.144	0.129	***	0.347	0.020	***	0.809	0.017	***
Senior Secondary	1.689	0.065	***	2.225	0.132	***	0.703	0.015	***	1.159	0.013	***
No Schooling (ref)	…	…	…	…	…	…	…	…	…	…	…	…
ACADEMIC TRAINING												
Training	3.958	0.022	***	87090913	1.766	ns	0.344	0.024	***	0.446	0.017	***
No Training (Ref)	…	…	…	…	…	…	…	…	…	…	…	…
DEMOGRAPHIC FACTORS												
Marital Status												
Married	2.126	0.021	***	0.766	0.024	***	2.198	0.017	***	1.469	0.016	***
Living Together	0.713	0.036	***	1.015	0.034	ns	1.121	0.019	***	0.704	0.017	***
Separated, Divorced or Widowed	1.430	0.036	***	1.079	0.077	ns	1.747	0.021	***	1.688	0.030	***
Household Head	0.801	0.044	***	2.192	0.036	***	0.961	0.015	**	0.855	0.015	***
Spouse of Household Head	0.461	0.034	***	0.908	0.060	#	1.323	0.019	***	1.182	0.017	***
Single (ref)	…	…	…	…	…	…	…	…	…	…	…	…
ECONOMIC & STRUCTURAL FACTORS												
Economic Migration	1.056	0.017	***	1.690	0.023	***	0.696	0.015	***	0.756	0.011	***
Region												
Cities and Towns	1.291	0.024	***	0.918	0.025	***	0.050	0.033	***	0.053	0.026	***
Other Urban Areas	1.176	0.024	***	0.685	0.027	***	0.193	0.014	***	0.225	0.013	***
Rural Areas (ref)	…	…	…	…	…	…	…	…	…	…	…	…

*** Significantly different from reference category (p<0.001)
** Significantly different from reference category (p<0.01)
* Significantly different from reference category (p<0.05)
# Significantly different from reference category (p<0.10)
ns Not significantly different from reference category (p<0.10 or better)
… Not applicable
(ref) Reference category
Source: Botswana Labour Force Survey (BLFS), 2005/2006.

4.4 Summary of Principal Findings

4.4.1 In summary, compared with men, women have made limited inroads in legislature/managerial, and professional occupations, the more secure and prestigious category (Table 1). Increased education, in particular, while benefitting both sexes, appears to have greater rewards for men.

4.4.2 The overall comparison of women's and men's employment across the ten industries and occupations has highlighted the multifaceted and complex nature of the determinants of individual employment. In particular, it has revealed some of the nuances that may be driving gender inequality. The showing that women with secondary education

are more likely than their peers without formal education to be engaged in unpaid employment imply that women may not be benefitting fully from more education. This is consistent with Siphambe's (2000) findings that, compared with men, women face tighter competition in the labor market. Similarly, the gender-differentiated analyses of employment in services and clerical occupations reinforce the imbalance in the development of educational and employment opportunities and the competition faced by labor market entrants reported by previous studies (Siphambe 2000). The analyses also emphasize the continued importance of adopting a life course approach in studies that examine employment behavior.

5 Conclusions, Policy Implications and Proposed Further Research

5.1 Conclusions

5.1.1 The main aim of this study was to examine the relationship between gender and employment in various industries and occupations in Botswana. The conceptual framework was guided by the literature on the relationship between employment of women and men and a wide range of variables that influence economic opportunities: human capital, demographic characteristics, and structural and economic factors.

5.1.2 The multivariate analyses of the associations between gender and employment in Botswana corroborate the few studies available for the country (see Siphambe 2000). Additionally, the analyses reveal interesting patterns in what this study views as initial evidence on the sources of gender inequality in Botswana, a country where labor market competition is stiff, and employment opportunities are limited (Siphambe 2000).

5.1.3 The second aim of the study was to quantify the gender inequality in various economic sectors. Overall, the study finds men to be substantially more likely than women to be: (i) craft and related workers; (ii) self-employed without employees; (iii) self-employed with employees; (iv) legislature/managerial and professional workers; (v) agricultural workers; and (vi) paid workers. On the other hand, men are substantially less likely than women to be employed in: (i) clerical occupations; (ii) unpaid family work; (iii) services; and (iv) plant and machine operations. Thus, the findings corroborate recent African literature showing widespread gender inequality in employment, and in particular, the overrepresentation of women in services and clerical work (Jah 2010a; Glick and Sahn 2001; Greenhalgh 1991; Siphambe 2000).

5.1.4 Having established the presence of gender inequality in employment in various economic sectors, the study addressed a second question: how the determinants of employment in these sectors vary by gender.

5.1.5 Because the determinants of employment behavior are apt to differ by sex, separate analyses were conducted for women and men. The regression results indicate that the gender differences in employment may, indeed, be linked with demographic and economic/structural factors that govern employment behavior, and to a lesser extent, individual human capital. The differences, however, depend on the specific economic sector. For instance, while no substantive gender differences were observed for unpaid family work, for paid employment, gender differences are related to age, higher educational attainment, and living together.

5.1.6 Similarly, for self-employment with employees, gender differences emerge in the associations with living together, separation/divorce/widowhood, and residing in other urban areas. Gender differences also exist in self-employment without employees, although in addition to separation/divorce/widowhood, marriage and being the spouse of the household head are significant.

5.1.7 For craft and related occupations, gender differences are evident in associations with primary schooling, marriage, living together, separation/divorce/widowhood and residence in other urban areas. For plant and machine operations, the important gender differences pertain to senior secondary schooling, living together and residence in cities and towns.

5.1.8 For service occupations, significant gender differences in the determinants of employment emerge for age (12 to 19), primary schooling, household headship, separation/divorce/widowhood and economic migration. For clerical occupations, gender differences in the determinants of employment involve age (both youth and adults), training, living together, separation/divorce/widowhood, and being the spouse of the household head.

5.1.9 Understandably, agriculture shows the least gender differentiation in the determinants of employment in this sector. By contrast, the determinants of employment in the most prestigious sectors— legislature/managerial, and professional occupations—reveal the most gender differentiation. Significant gender differences are evident for a host of de-

terminants of employment: young adults, adults, senior secondary schooling, training, cities and towns, other urban areas, and almost all the demographic factors (marriage, living together, and separation/divorce/widowhood).

5.1.10 Thus, the descriptive, multivariate and gender-disaggregated analyses all underscore the importance of demographic and structural/economic factors on the gender inequality in employment. The significant results for demographic factors, specifically marriage, are consistent with recent findings for SSA obtained from more sophisticated decomposition analyses of the sources of change in women's employment (Jah 2010b).

5.1.11 Raising the status of women through employment has been a lynchpin in the international development agenda. Yet, little empirical evidence on the relationship between marriage and labor force participation is available in the African literature, partly due to data scarcity.[8] Similarly, most studies that examine how human capital mediates the gender-employment relationship in SSA have shown persistently low labor force attachment for women.[9] Such mixed evidence from past studies, some of which are dated or based on small, non-representative samples, is of limited utility in assessing contemporary progress toward reaching the MDGs in SSA.

5.1.12 This study attempted to overcome some of the limitations of past studies. As well, the aim was to make a contribution to the literature on gender and employment in SSA in particular, and developing countries as a whole. First, this appears to be the first empirical study to examine employment outcomes for a large, nationally representative sample that permits more detailed occupational distinctions (10 in total) than have heretofore been possible. Therefore, it complements the income studies that use the Living Standards Surveys in SSA. Second, it is one of the few studies in SSA that uses nationally representative data to quantify gender inequality in employment and to then examine the determinants of this inequality. Third, it refines theoretical explanations through consideration of demographic and structures/economic factors that are associated with employment. Despite missing cases, the application of appropriate statistical estimation methods allowed robust associations between key variables to emerge. The results suggest that in the absence of missing cases, even stronger associations could be expected.

5.2 Policy Implications

5.2.1 The foregoing conclusions have policy implications for the provision of secure and profitable jobs to both men and women, and ultimately, for attaining the gender equality MDG.

5.2.2 The study's use of representative data and detailed description of the methodology, which facilitates replication elsewhere in the region, are particularly valuable in designing development policies and programs that aim to achieve gender equality in employment. The broadened conceptualization beyond human capital that considers demographic factors and economic and structural factors signals the importance of wide-ranging policies, rather than unidirectional educational policies. Policies designed to promote equity and eliminate poverty must recognize the differences between women's worlds of work, particularly with a view to enhancing profitability and career development in occupations where women are over-represented as well as under-represented. The following section refers to the economic sectors where policy directives are most critical.

5.2.3 ***Paid Employment and Legislature and Managerial Occupations***.

[8] The African evidence is mixed. In West Africa, the relationship between marriage and women's employment is positive (Glick and Sahn 1997 for Guinea; Appleton et al. 1990 for Cote d'Ivoire), but negative in East Africa (Krishnan 1996 for Ethiopia) and in South Africa (Naude and Serumaga-Zake 2001; Ntuli 2007). If this pattern holds for the rest of the region, the marriage-employment relationship appears to be conditioned by geography. Marriage increases the likelihood of women's employment in West Africa but impedes it in the Eastern and South African sub-regions. This sub-regional effect, in turn, can be linked to cultural differences in family systems and nuptiality. Further, past studies have been limited to rural (Naude and Serumaga-Zake 2001) or urban data (Glick and Sahn 1997; Shapiro and Tambashe 1997), or a particular subgroup (Krishnan 1996). Few studies (Glick and Sahn 1997; Shapiro and Tambashe 1997; Siphambe 2000) have distinguished between occupational sectors. The mixed evidence can also be tied to design issues and the use of differing statistical approaches.

[9] Most studies that examine how gender relates to employment in SSA have shown low labor force attachment for women (Appleton et al. 1990; Glick and Sahn 1997; Krishnan 1996; Siphambe 2000; Naude and Serumaga-Zake 2001; Ntuli 2007; Vijverberg 1993). However, the reasons for this low attachment are inconsistent, with some studies supporting (Appleton et al. 1990; Glick and Sahn 1997) and others refuting (Siphambe 2000; Vijverberg 1993) the theory of human capital. The studies by Siphambe (2000) in Botswana and Vijverberg (1993) in Cote d'Ivoire assert that women are disadvantaged in the labor market and this is despite their greater educational attainment relative to men (Siphambe 2000). This assertion, which is tied to the hypothesis of discrimination (Birdsall and Sabot 1991), has been disputed by other authors who contend that African labor markets are the "least discriminatory in the world" and point to women's lower education (Appleton et al. 1990; Glick and Sahn 1997; Naude and Serumaga-Zake 2001; Ntuli 2007).

The disadvantage faced by women in obtaining employment in the more secure and profitable industries and occupations presents a challenge for reducing gender inequality in the labor market. A comprehensive effort is needed, one that focuses on both human capital and demographic influences rather focusing unilaterally on one or the other. To this end and in terms of:

5.2.3.1 ***Human capital policies*** that focus on quality of education, and especially for women, labor market relevance, should be enacted and enforced. Policies should aim to ensure that young female labor market entrants' academic qualifications match current labor market requirements.

5.2.3.2 ***Demographic influences*** that facilitate women's ability, regardless of their marital status, to obtain and remain in profitable paid occupations should be designed and implemented.

5.2.4 ***Self-Employment with and without Employees***. The fact that men are more likely than women to be self-employed, with or without employees, points to, among other factors, women's inability to secure capital. Accordingly, policies that facilitate women's access to credit are imperative. Further, policies to ensure that all forms of self-employment are secure, profitable and sustainable are needed. Based on the data regarding self-employment without employees, measures that reduce the constraints posed by marriage, and to some degree, being a female household head are also desirable.

5.2.5 The hurdle faced by women relative to men in self-employment without employees stems mostly from demographic factors, with human capital factors not appearing to be critical. The situation is different for self-employment with employees. Participation in this sector is associated with region of residence in addition to being unmarried but cohabiting with a partner. This calls for policy focus on both sets of factors.

5.2.6 ***Craft and Related Occupations and Plant and Machine Operations***. Beyond ensuring that craft and related occupations and plant and machine operations are profitable, safe and secure for all women, policy efforts must be directed toward increasing craft-related employment for married and cohabiting women and women residing in urban areas other than cities and towns. Likewise, with respect to plant and machine operations, policy emphasis must be put on non-married cohabiting women.

5.3 Proposed Further Research

5.3.1 Although the results do not present unequivocal evidence about the sources of gender inequality, these initial findings point to where and what to look for in future analyses of the determinants of employment. The study provides updated data on gender inequality in employment and a rationale for further analysis of its determinants. The results suggest that gender inequality in employment is rooted in a web of demographic factors and economic/structural influences on prevailing employment opportunities and human capital. However, the analysis does not constitute irrefutable proof of the relative importance of each factor. Decomposition methods would be necessary to estimate relative effects by apportioning the determinants into differences in human capital versus differences in demographic and economic/structural factors.

5.3.2 Moreover, the mix of demographic, economic/structural and human capital factors that are linked to gender inequality likely include unobserved family factors that pertain to both individual and community attributes. A growing literature indicates that failure to account for these confounding unmeasured influences in African employment analyses can alter substantive research conclusions (Jah, 2010b). The logistic regressions used thus far cannot address potential variations in unmeasured fixed factors of individual and family. However, fixed effects modeling in SAS can handle these unmeasured factors (Allison 1996), and therefore, should be considered for future analyses to determine if this method would lead to different interpretations of the Botswana data.

5.3.3 Another limitation is that the analyses are based on cross-sectional data. The results, therefore, pertain to only one point in time and are liable to temporal fallacy (Thornton 2001). In the absence of longitudinal data, the AfDB should support comparable cross-sectional surveys across several periods to monitor the progress of development efforts.

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